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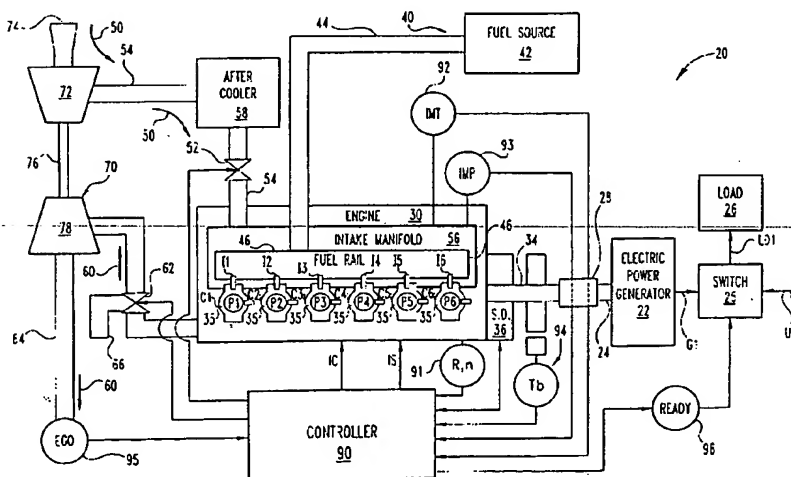
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[Continued on next page]

- (54) Title: START -UP CONTROL OF INTERNAL COMBUSTION ENGINES**



- (57) **Abstract:** An electric power generation system (20) is disclosed, which includes an electric power generator (22) driven by a four-cycle internal combustion engine (30). The engine (30) includes a plurality of reciprocating cylinders (C1-C6) each rotatably coupled to a crankshaft (34), which drives the electric power generator (22). A controller (90) is included that is operable to control fueling to start the engine (30) as a function of engine temperature and determine initial engine start-up as a function of rotational engine speed. This controller (90) regulates engine acceleration until a target engine speed is reached from initial start-up. Once this target speed is reached, the controller (90) provides a speed governor function.



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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F02D 31/00, 41/06

US CL : 123/491,352

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 123/ 2, 491, 352, 685, 686, 687; 290/51

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2002/0078922 A1(MIZUKI) 27 June 2002 (27.06.2002), See entire document.	1-20
Y	US 2002/0011238 A1 (YOMOGIDA) 21 January 2002 (31.01.2002), See entire document.	1-20
Y	US 5,199,400 A (SPRENGER et al) 06 April 1993 (06.04.1993), See entire document.	1-20
Y	US 5,890,467 A (ROMZEK) 06 April 1999 (06.04.1999), See entire document.	1-20
Y	US 6,196,190 B1 (PRZYMUSINSKI et al) 06 March 2001 (06.03.2001), See entire document.	1-20
Y	US 6,145,486 A (AIKAWA) 14 November 2000 (14.11.2000), See entire document.	1-20
Y	US 4,964,386 A (AKIYAMA et al) 23 October 1990 (23.10.1990), See entire document.	1-20
Y,P	2003/0019472 A1 (KONNO) 30 January 2003 (30.01.2003), See entire document.	1-20
Y,P	US 6,467,458 B1 (SUZUKI et al) 22 October 2002 (22.10.2002), See entire document.	1-20

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,625,123 A (GILLET et al) 25 November 1986 (25.11.1986), See entire document.	1-20